

Lat 40.99549 Lon -124.08375

Reply To: 3420

Date: August 24, 1989

Subject: Biological Evaluation of Cutworms in  
Block D, Humboldt Nursery (Report No. 89-14)

To: Forest Supervisor, Six Rivers National Forest

On August 15 and 16, 1989, John Dale visited Humboldt Nursery for the purpose of re-examining mortality in true fir seedlings caused by root weevils, and sampling soil areas outside of nursery beds for larval populations of root-feeding weevils. While at the nursery, Cherry Dulaney and John examined beds of 1-0 Douglas-fir seedlings in D block where mortality was occurring.

Extensive losses from cutworms were found not only in 1-0 Douglas-fir, but also in 1-0 Jeffrey pine. Damage was not always readily apparent because the remains (stubs) of cut seedlings were frequently below the soil surface. Thus, small spaces in the rows of seedlings thought to be sowing gaps have been created by the feeding of cutworms. Losses have not been limited to small gaps in the eight rows per bed, however. Stocking in several areas, three to five feet in length, has fallen to less than 50%, and in a few instances to less than 25%.

Beds were examined both in the day and in the evening. Larvae were most easily found during the day under flakes of soil created by fertilizer application. Only one larvae was found upon a seedling in the evening. Larvae collected are presently being reared. Adults will be sent to state taxonomists for identification. Larvae previously collected by nursery personnel also will be forwarded to the California Department of Food and Agriculture.

#### MANAGEMENT ALTERNATIVES

1. Do Nothing. It appears that about half the larvae in the beds remain 14 or more days from pupation. Therefore, losses will continue, but probably at a level less than experienced to date. However, sufficient time remains in the summer and early fall for another generation to cause additional losses.
2. Suppression. Several chemical compounds have been used to control cutworms in forest nurseries and seedbeds -- carbaryl, chlorpyrifos, diazinon, lindane, methomyl and Trichlorfon. Diazinon usually has been the compound of choice. The county agricultural commissioner should be consulted to insure conformity to label and county regulations.
3. Cultural. Most of the larvae found were located under soil flakes centered between the rows. Modification of the fertilizer applicator with rollers might result in sufficient pressure to mash these larvae. However, larvae located next to the seedlings would be missed, and soil compaction might be a problem.

4. Combination of 2 and 3. Alternatives two or three are not mutually exclusive.

Should there be any questions concerning the cutworms present at Humboldt, these should be direct to John Dale at R05A or 415/556-4321.

BRUCE H. ROETTGERING

JOHN NEISESS, Program Leader  
Forest Pest Management  
State and Private Forestry

JDale:ra 8/25/89

B.H.R. for J.N. - 8/25/89

A stylized handwritten signature, possibly reading "J.D.", written in dark ink.